

de HAVILLAND

CAGE CODE 71867

DESIGN STANDARD

1.0

Wrench Dimension

There are three types of wrenches in this document, as listed below. The dimensions of each different type of wrench are given in the associated Table and Figure. The clearance required must be calculated from the dimensions given in the Tables.

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DATE	1996-02-06	WRENCH CLEARANCE	DS 136 PAGE 1 OF 4 Revision: A
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FIGURE 1 - RATCHET WRENCH AND SOCKETS

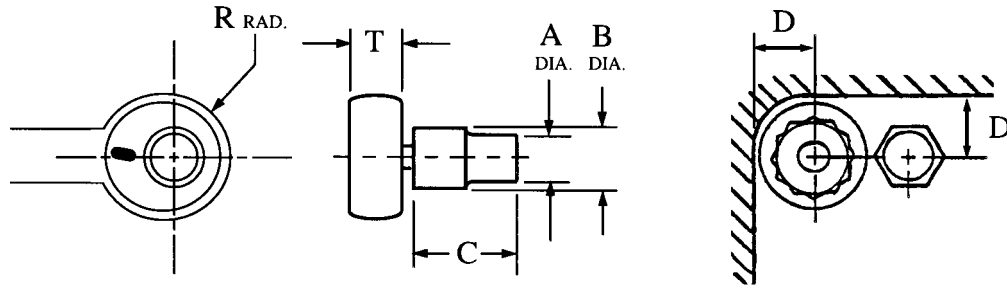


TABLE 1 - SOCKET DIMENSIONS

NOMINAL OPENING	1/4" DRIVE T = .40" R = .40"				3/8" DRIVE T = .60" R = .60"				1/2" DRIVE T = .80" R = .80"				3/4" DRIVE T = 1.20" R = 1.30"			
	A	B	C	D†	A	B	C	D†	A	B	C	D†	A	B	C	D†
1/4 (.250)	.397 .390*	.510 .440*	1.01	.248 .245*	.400	.690	1.26	.250								
5/16 (.312)	.510 .468*	.510 .468*	1.01	.305 .284*	.470 .470*	.690 .697*	1.26	.285 .285*								
11/32 (.344)	.519 .515*	.519 .515*	1.01	.310 .308*	.499	.690	1.26	.300								
3/8 (.375)	.580 .540*	.580 .540*	1.01	.340 .320*	.568 .555*	.690 .697*	1.26	.334 .328*								
7/16 (.438)	.683 .625*	.683 .625*	1.01	.392 .362*	.665 .625*	.690 .697*	1.26	.383 .362*								
1/2 (.500)	.697 .703*	.697 .703*	1.01	.398 .402*	.751 .740*	.880 .740*	1.26	.426 .420*								
9/16 (.562)					.814 .796*	.880 .796*	.26	.457 .434*	.820 .828*	.940 .937*	1.58	.460 .464*				
5/8 (.625)					.890 .859*	.890 .859*	1.26	.495 .480*	.892 .906*	.940 .937*	1.58	.496 .503*				
11/16 (.688)					.968 .953*	.968 .953*	1.26	.534 .526*	.974 .948*	.974 .984*	1.58	.537 .524*				
3/4 (.750)					1.110 1.015*	1.110 1.015*	1.26	.605 .558*	1.067 1.067*	1.067 1.067*	1.58	.584 .584*				
13/16 (.812)					1.141	1.141	1.406	.621	1.130	1.130	1.58	.615				
7/8 (.875)					1.250	1.250	1.406	.675	1.218	1.28	1.76	.659	1.385	1.500	2.01	.742
15/16 (.938)									1.300	1.300	1.76	.700	1.450	1.575	2.01	.775
1 (1.000)									1.375	1.375	1.76	.738	1.510	1.575	2.08	.805
1-1/16 (1.062)									1.480	1.480	1.86	.790	1.575	1.575	2.14	.838
1-1/8 (1.125)									1.540	1.540	1.94	.820	1.635	1.635	2.33	.868
1-1/4 (1.250)									1.750	1.750	2.02	.925	1.825	1.825	2.39	.962
1-5/16 (1.312)													1.920	1.920	2.59	1.010

Sources: GGG-W-641 & GGG-W-1437

* Denotes thin wall, high strength socket per GG-W-1437

† Clearances D are based on a clearance of .050" on the reduced portion of the socket (Dimension A) where applicable.

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DESIGN STANDARD FIGURE 2 - BOX WRENCH

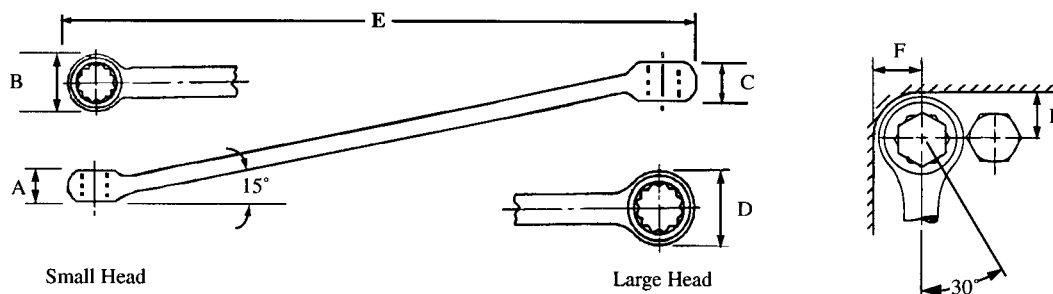


TABLE 2 - 15° OFFSET BOX WRENCH DIMENSIONS

SMALL HEAD				LARGE HEAD				LENGTH - E	
NOMINAL OPENING	A	B	F†	NOMINAL OPENING	C	D	F†	MIN	MAX
3/8 (.375)	.33	.63	.36	7/16 (.438)	.35	.72	.41	6.50	8.32
7/16 (.438)	.35	.72	.41	1/2 (.500)	.38	.80	.45	7.50	8.75
7/16 (.438)	.35	.72	.41	9/16 (.563)	.38	.91	.51	7.50	8.75
1/2 (.500)	.38	.80	.45	9/16 (.563)	.38	.91	.51	7.50	9.13
9/16 (.563)	.38	.91	.51	5/8 (.625)	.44	.97	.54	8.25	9.88
5/8 (.625)	.44	.97	.54	11/16 (.688)	.47	1.07	.58	9.74	11.00
5/8 (.625)	.44	.97	.54	3/4 (.750)	.54	1.13	.62	9.74	11.50
11/16 (.688)	.47	1.07	.58	3/4 (.750)	.54	1.16	.63	10.25	11.75
3/4 (.750)	.54	1.13	.62	13/16 (.813)	.57	1.19	.64	10.75	12.50
3/4 (.750)	.54	1.16	.63	7/8 (.875)	.60	1.32	.71	10.87	13.25
13/16 (.813)	.57	1.25	.68	7/8 (.875)	.60	1.32	.71	11.75	14.00
7/8 (.875)	.60	1.32	.71	15/16 (.938)	.60	1.38	.74	12.00	14.00
7/8 (.875)	.60	1.32	.71	1 (1.000)	.63	1.44	.77	12.25	14.25
15/16 (.938)	.63	1.38	.74	1 (1.000)	.72	1.50	.80	13.19	15.75
15/16 (.938)	.65	1.44	.77	1-1/16 (1.063)	.69	1.63	.86	13.75	16.38
1 (1.000)	.63	1.44	.77	1-1/16 (1.063)	.69	1.63	.86	14.00	16.38
1 (1.000)	.66	1.44	.77	1-1/8 (1.125)	.75	1.63	.86	14.25	16.38
1-1/16 (1.063)	.71	1.60	.85	1-1/8 (1.125)	.75	1.69	.90	15.07	18.00
1-1/16 (1.063)	.75	1.60	.85	1-1/4 (1.250)	.82	1.88	.99	15.88	18.50
1-1/8 (1.125)	.75	1.63	.86	1-5/16 (1.313)	.82	1.91	1.01	17.00	19.00
1-1/4 (1.250)	.82	1.88	.99	1-5/16 (1.313)	.85	1.96	1.03	17.38	19.50
1-1/4 (1.250)	.82	1.88	.99	1-3/8 (1.375)	.88	2.07	1.09	18.25	20.50
1-1/4 (1.250)	.82	1.91	1.01	1-7/16 (1.438)	.94	2.19	1.14	19.00	21.25
1-5/16 (1.313)	.83	1.91	1.01	1-1/2 (1.500)	1.00	2.19	1.14	20.00	22.00
1-7/16 (1.438)	.94	2.13	1.12	1-1/2 (1.500)	1.00	2.19	1.14	21.00	23.00
1-7/16 (1.438)	.94	2.21	1.16	1-5/8 (1.625)	1.07	2.44	1.27	22.00	24.00
1-5/8 (1.500)	1.00	2.19	1.15	1-13/16 (1.688)	1.07	2.44	1.27	22.50	24.50

Sources: GGG-W-636E
† Clearances F are based on a clearance of .050" on dimensions B and D for small and large heads respectively.

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FIGURE 3 - OPEN END WRENCH

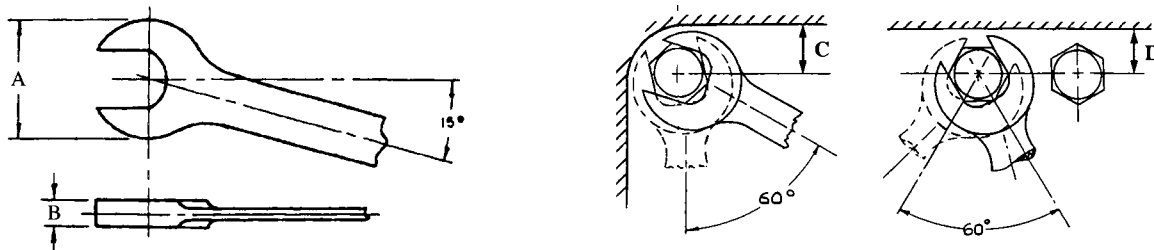


TABLE 3 - OPEN END WRENCH DIMENSIONS

WRENCH OPENING	A	B	C†	D†
3/16 (.188)	.47	.18	.28	.24
13/64 (.203)	.50	.18	.30	.25
7/32 (.219)	.50	.18	.30	.25
15/64 (.234)	.69	.18	.40	.34
1/4 (.250)	.60	.21	.35	.29
9/32 (.281)	.63	.21	.36	.30
5/16 (.312)	.69	.21	.40	.34
11/32 (.344)	.88	.15	.49	.41
3/8 (.375)	.88	.22	.49	.41
7/16 (.438)	1.06	.26	.58	.49
1/2 (.500)	1.08	.30	.59	.50
9/16 (.562)	1.24	.30	.67	.56
5/8 (.625)	1.38	.33	.74	.62
11/16 (.688)	1.50	.36	.80	.67
3/4 (.750)	1.63	.39	.86	.72
13/16 (.812)	1.88	.52	.99	.83
7/8 (.875)	1.88	.52	.99	.83
15/16 (.938)	2.05	.59	1.08	.91
1 (1.000)	2.07	.59	1.08	.91
1-1/16 (1.062)	2.25	.50	1.18	.99
1-1/8 (1.125)	2.38	.66	1.24	1.04
1-1/4 (1.250)	2.70	.72	1.40	1.18
1-5/16 (1.312)	2.70	.72	1.40	1.18
1-7/16 (1.438)	3.69	.63	1.90	1.60
1-5/8 (1.625)	4.25	.94	2.18	1.83
1-11/16 (1.688)	4.29	1.125	2.20	1.85
1-13/16 (1.812)	4.25	1.125	2.18	1.83
1-7/8 (1.875)	4.41	1.125	2.26	1.90
2 (2.000)	4.41	1.125	2.26	1.90
Sources: GGG-W-636E & Vendor				
† Clearances C are based on a clearance of .050" on dimension A. and clearances D are based on percentage of dimension C.				

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